

Week 1

Inheritance

DNA is a molecule in every **nucleus** of every cell. It **controls** all the **activities** of the cell.

DNA is a set of instructions of how to make a specific organism (including all the **inherited** characteristics).

At **fertilisation**, the nucleus of the egg and the nucleus of the sperm **fuse** together.

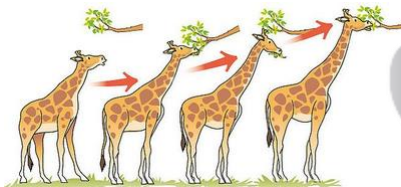
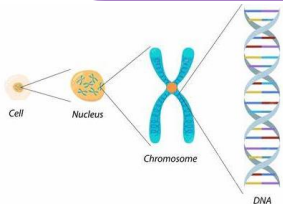
The DNA in gametes is half of the DNA of the parent, but it is a **random** selection.

During gamete production, **mutations** can also occur.

A mutation is a **change** in the DNA code.

Phenotype – a physical characteristic.

Genotype – the particular DNA that codes for a phenotype.



Week 2

Evolution

Evolution is a **change** in the **inherited characteristics** of a population **over time**, caused by natural selection.

Evolution can also cause the formation of a **new species**.

If two populations are separated by a physical **barrier**, each population may undergo its own mutations and **natural selection** may act on each population **differently**.

Eventually these two populations may become so **different** that they **cannot interbreed** to produce **fertile offspring**. This is known as speciation.

The **more frequent** the breeding, the faster a species can evolve.

The **fossil record** provides evidence for the theory of evolution as it shows changes over time.

Week 3

Human impact

Extinction is when there are no living individuals of a species left in the wild and/or in captivity.

Extinction can be caused by changes to **habitats**, new **predators** or **competitors** or new **diseases**.

Global warming, volcanic eruptions and meteors are considered **mass extinction events** and have happened 5 times in the history of the Earth.

Humans are causing species to go extinct at such a high rate; scientists suggest we may be in the midst of a **6th mass extinction event**.

Extremophiles are organisms can survive in extreme **conditions**, such as very high temperature, pressure, salt or extreme pH.

Year 8 Science: Term 4 Life Diversity and Earth Systems



Week 4

Igneous rocks form when molten (liquid) rock solidifies (freezes). Rocks formed **inside** the Earth from **magma cooling slowly** are called **intrusive** rocks. Intrusive rocks form **large crystals**. **Erosion** moves pieces of rock away from where they started. **Weathering** is the breaking down of rocks into smaller pieces.

When pieces of rock are carried to lakes or the sea they sink to the bottom and settle as layers. This is called **sedimentation** into **Sedimentary rocks**.

When exposed to intense **HEAT** and high **PRESSURE** the rock changes form (morphs) into a different type of rock. This changes its structure into **Metamorphic rock**.

Igneous	Sedimentary	Metamorphic
Formed by molten rock that has cooled and solidified.	Formed on the surface of the Earth by layers of sediment	Formed from other rocks that have come under intense heat and pressure.
Formed by the magma in volcanoes cooling inside the Earth.	Often found where oceans, lakes or other bodies of water once were	Formed deep within the Earth.
Often appear shiny or glossy, or with visible crystals.	Layered and soft looking. Can contain fossils.	These rocks are very hard , and can contain crystals.
Obsidian, granite and basalt are examples.	Shale, sandstone and limestone are examples.	Slate, marble and gneiss are examples.

Week 5 & 6

Water Cycle

Water constantly **evaporates** from the surface of the Earth. This can be from the sea, lakes, rivers, reservoirs or even small puddles. It also evaporates from the land's surface.

This evaporation puts water into the atmosphere.

The water vapour will cool down and **condense** into tiny droplets of liquid water. It may even freeze if the temperature is low enough. This condensation **forms clouds**.

As clouds get thicker and contain more water, they appear grey as less light passes through.

As more water condenses the water droplets and ice crystals in clouds grow until they are **bigger and heavier**. When they get heavy, they start to fall as **precipitation**: rain, hail, sleet, and snow.

Key words:

Adaptation - A characteristic that allows an organism to survive and reproduce in its habitat

Ecosystem - Interaction between a community of living organisms and their environment

Variation - The difference in characteristics within a population

Erosion - When rock is worn away and transported to another location by wind, rain or flowing water

Magma - Molten rock below the Earth's surface

Sublimation - The change of state of a substance from a solid to a gas, without becoming a liquid in between

Week 1

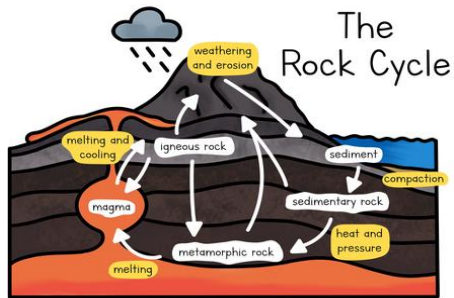
Questions	Answers
What do you call A change in DNA	Mutation
What does the term gamete mean?	A gamete are sex cells they contain a random mix of genotypes from each parent
Why is there no variation in identical twins?	There is no difference in their DNA. They are from the same zygote.
Why are non identical twins different?	They are from different sperm and egg cells. So they have different DNA.
Correctly describe a phenotype	The physical characteristic you see

Week 2

Questions	Answers
What is evolution?	Evolution is a change in the inherited characteristics of a population over time, caused by natural selection.
Define speciation	This is when two populations may become so different that they cannot interbreed to produce fertile offspring.
What is the evidence for evolution?	Fossil record show evidence for evolution
What impact can a physical barrier have	A physical barrier can cause the populations to evolve differently

Week 3

Questions	Answers
What things can cause extinctions?	Global warming, habitat changes, competition and meteors
How many mass extinctions have there been?	5
What is an extremophile?	Extremophiles are organisms can survive in extreme condition
Why are humans considered to be the 6th extinction?	Humans are causing species to go extinct at such a high rate, scientists suggest we may be in the midst of a 6th mass extinction event.



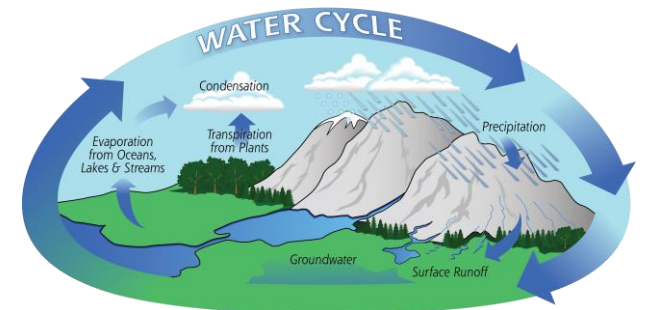
Week 4

Questions	Answers
Other than tiny pieces of rock, what else will be found in sediment?	It also includes the bones and shells of creatures that have died and sunk to the bottom.
Why do intrusive rocks form large crystals?	Because intrusive rocks cool slowly, they are able to form larger crystals than if they cooled rapidly.
Describe the stages involved in the formation of sedimentary rock.	Weathering or erosion, sedimentation, compression and cementation
Explain the difference between magma and lava.	Molten rock under the surface is called magma, above the surface it is lava.

Year 8 Science: Term 4 Life Diversity and Earth Systems

Week 5 & 6

Questions	Answers
What process puts water in the atmosphere?	Evaporation
How are clouds formed?	Water vapor condenses in the air
What is rain called?	Precipitation
How do clouds form?	Water evaporates into the atmosphere then condenses to form droplets these are clouds.
Describe condensation.	Condensation is when a gas becomes a liquid.



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- Adaptation** - A characteristic that allows an organism to survive and reproduce in its habitat.
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